

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/10269

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 H02J3/12 H02J3/18 H02M5/44

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 H02J H02M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/126060 A1 (LOF PER-ANDERS KRISTIAN ET AL) 3 July 2003 (2003-07-03) abstract figure 1 ---	1-6
Y	BLAABJERG F ET AL: "Power losses in PWM-VSI inverter using NPT or PT IGBT devices" POWER ELECTRONICS SPECIALISTS CONFERENCE, PESC '94 RECORD., 25TH ANNUAL IEEE TAIPEI, TAIWAN 20-25 JUNE 1994, NEW YORK, NY, USA, IEEE, 20 June 1994 (1994-06-20), pages 434-441, XP010549405 ISBN: 0-7803-1859-5 page 435 -page 436, left-hand column ---	1-6

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
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- *O* document referring to an oral disclosure, use, exhibition or other means
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- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
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Date of the actual completion of the international search

17 June 2004

Date of mailing of the International search report

05/07/2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BENNO JÄCKLI: "Energiesparen mit Frequenzumrichter" INTERNET ARTICLE, 'Online! 2 December 1996 (1996-12-02), XP002284829 Retrieved from the Internet: <URL: http://www.energie.ch/themen/industrie/fr/ > 'retrieved on 2004-06-15! page 4-5 ---	1-6
Y	BIRD/KING/PEDDER: "An Introduction to Power Electronics" 1993, JOHN WILEY & SONS, CHICHESTER, NEW YORK, BRISBANE, TORONTO, SINGAPORE XP002284830 2 ISBN: 0 471 92616 7 page 85-86; figures 2.41,2.42 ---	4,5
A	DE 100 10 350 A (SETEC ELEKTRONISCHE ANTRIEBSRE) 13 September 2001 (2001-09-13) the whole document ---	1
A	BERRINGER K ET AL: "Semiconductor power losses in AC inverters" 8 October 1995 (1995-10-08), INDUSTRY APPLICATIONS CONFERENCE, 1995. THIRTIETH IAS ANNUAL MEETING, IAS '95., CONFERENCE RECORD OF THE 1995 IEEE ORLANDO, FL, USA 8-12 OCT. 1995, NEW YORK, NY, USA, IEEE, US, PAGE(S) 882-888 XP010193037 ISBN: 0-7803-3008-0 abstract page 885, right-hand column -page 886, right-hand column -----	1

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Patent document cited in search report	Publication date	Patent family member(s)			Publication date
US 2003126060	A1	03-07-2003	US	2002087234 A1	04-07-2002
			US	2002084655 A1	04-07-2002
			EP	1346452 A1	24-09-2003
			WO	02054561 A2	11-07-2002
			US	2003006613 A1	09-01-2003
			US	2002103745 A1	01-08-2002
DE 10010350	A	13-09-2001	DE	10010350 A1	13-09-2001